

Section 6

Environmental Health Risk to Children

6.1 Overview

This component of the SEPP was intended to improve the health and quality of life of Manchester children by reducing exposure to environmental risks, with specific emphasis on lead poisoning and asthma. The component was envisioned by the Manchester Health Department to promote a healthy urban environment for all residents.



Manchester, the largest City in New Hampshire, faces unique challenges in public health.

work with the Public Health Assessment and Planning Unit of the Manchester Health Department in February of 2000. She was employed by the Health Department until February 2005.

Dr. Caron prepared a document titled

“Supplemental Environmental Project Program: Reducing Environmental Health Risks Posed to Children Residing in Manchester, NH 2/7/2000 – 2/7/2005” which details much of the work she completed during her tenure in Manchester. Much of the information in this section was taken from Dr. Caron’s summary document.

6.2 Goals

The 1999 Workplan set forth multiple goals for this program. These included:

- Hiring an Environmental Toxicologist;
- Funding environmental projects to address lead and asthma risks in Manchester; and
- Establishing a computer mapping program.

These goals were achieved, as discussed in the following section

6.3 Benefits Achieved

A. Hired an Environmental Toxicologist
Dr. Rosemary Caron, PhD, MPH, an Environmental Toxicologist and Chronic Disease Epidemiologist, began

B. Funded Environmental Projects

Applications were solicited for funding through the SEPP. A total of \$200,000 in grant funds were distributed to local organizations reducing the risks that lead and asthma pose to children within Manchester. The Manchester Health

Department administered the grants, and often provided support or partnership with the grant recipients. The programs receiving grant funds included:

American Lung Association of New Hampshire – to establish baseline data on the prevalence and



An in-home asthma outreach education program raises awareness of the family’s living environment to affect a decrease in asthma triggers such as dust, cockroaches, animals, chemicals, and smoke.

severity of asthma in Manchester Public Elementary Schools.

The Way Home's Healthy Home Service Project – to conduct peer education for lead poisoning prevention and in-home asthma triggers.

Dartmouth Center for Environmental Health Services – to conduct an educational campaign targeting beliefs and knowledge of childhood lead poisoning within the Hispanic population of Manchester.

C. Established a computer mapping system

Dr. Caron worked with the New Hampshire Department of Environmental Services to map air pollution point sources in Manchester. Social demographic factors and chronic disease prevalence layers were created and mapped with the sources. Maps were generated showing racial and ethnic distribution, census tracts, zip code, and lead-containing housing stock in 1950 and 1980 with elevated blood level cases overlain. Dr. Caron also worked on initiatives to negotiate for the Manchester Health Department public health data sets, such as inpatient and ambulatory hospital admissions, cancer data, birth and mortality data, from NH Department of Health and Human Services, Health Statistics and Data Management.

6.4 Measurable Results and Long Term Benefits

Measurable results were collected through the implementation phase of the project. These included:

- Number of families with children diagnosed with moderate/severe asthma receiving in-home education as a result of this project: 24
- Percentage of school nurses in Manchester to receive free peak flow meters (used to measure child's peak exhalation flow to monitor severity of asthma attack): 100% (distributed during school year 2001 – 2002).



"When compared to the rest of the state, Manchester experiences four times as many cases of lead poisoning for every child under the age of 6 years, and 27% of the state's total number of cases of lead poisoning." – Manchester Department of Health, Lead Poisoning Report Card 2005

- Number of families educated through the peer education model promoted by Healthy Home Services and The Way Home (funded grant, Section 6.2B): Approximately 800
- Number of families responding to a survey requesting asthma and respiratory health information for elementary school children: 5112 (72% response for 7100 surveys)

In addition, Dr. Caron spent a great deal of energy arranging for collection of baseline data in diagnoses of asthma and lead poisoning from local schools and hospitals, to use as baseline data for future measures of project success. The preparation of report cards¹ for Manchester in Environmental Quality, Asthma, Obesity, and Physical Activity were one result of this effort.

The data and the connections between the Health Department, hospitals and schools offer long term benefits to the residents of Manchester through improved communication and efficiency

¹ These and other report cards are available at <http://www.manchesternh.gov/CityGov/HLT/healthdatareports.html>

in health care management. In addition, studies of the data may continue to find environmental triggers of health problems leading to potential improvements of the environment and environmental health of the area.

Dr. Caron estimated that in the period from 2000 to 2005, this project touched the lives of approximately 6500 children² and their families through projects such as:

- Determining the prevalence of asthma among the elementary school population and following up with children who exhibited signs and symptoms of asthma, but who had never been diagnosed by a healthcare professional;
- Engaging in a peer education model for asthma and childhood lead poisoning with The Way Home;
- In conjunction with the American Lung Association of New Hampshire, educating children diagnosed with asthma and their families about this chronic disease;
- Conducting focus groups with Dartmouth's Center for Environmental Health Sciences on the knowledge, practices, and beliefs of childhood lead poisoning among the Hispanic community; etc.

Helping families to better understand and manage children's health is a major benefit.

² Caron, R. "Supplemental Environmental Project Program: Reducing Environmental Health Risks Posed to Children Residing in Manchester, NH 2/7/2000 – 2/7/2005." Manchester Health Department. 2005. Page 44.

For more information on childhood lead poisoning, see the special report prepared by City of Manchester Health Department.³

6.5 Leveraged Funding

Dr. Caron applied for a cumulative total of \$1,000,000 in grants to address air quality monitoring and respiratory illness and to develop and implement an obesity and physical activity intervention and transportation program



Programs such as "Cardiovascular Health Activities for Manchester Project (CHAMP)" and "Healthy Hearts for Manchester Families" promoted nutrition education and physical activity to center city youth in Manchester.

for center city youth in Manchester. Grant applications for addressing and reducing childhood lead exposure amounted to at least an additional \$500,000. Other funding received through Dr. Caron's work included in-

kind grants, private funding, and partnership monies.

A summary of the leveraged funding received is listed below. The funding source is in parentheses, with amount where available.

- Incidentals for Dr. Caron, office space, phone, computer, travel costs and supplies (Manchester Health Department)
- Balance of operating budgets for programs receiving grants (grant recipients)
- Federal funding for "Public Health Preparedness and Response for Bioterrorism Project" allowed Dr. Caron to assume additional responsibility in chronic disease assessment, education, and prevention (Center for Disease Control)

³<http://www.manchesternh.gov/CityGov/HLT/files/7ACFC C55D5A74664A4E2FB1065492CCD.pdf>

- Funding for an Asthma Prevalence Study in Manchester School (Kalwall Settlement⁴, \$3,265)
- Funding for Multi-Lingual Asthma Education and Outreach Program (EPA 2004 Healthy Communities Grant, \$29,801) and in-kind donations for Peak Flow Meters for this project (GlaxoSmithKline Pharmaceuticals, \$1,350)
- Funding for equipment and supplies for use in implementing High Intensity Targeted Lead Screening (HITS) Initiative (US Conference of Mayors, \$5,000)
- Funding for computers for Manchester school nurses to form the basis for maintaining electronic medical records (\$10,000 from UNH, remainder from Manchester Health Department). Funding to develop and implement an automated school nurse surveillance project (New Hampshire Department of Health and Human Services, Bureau of Communicable Disease Control, \$100,000).

Total leveraged funds: \$149,400

The total SEPP funds spent on this task was \$499,691. A total of \$649,091 was spent on health risk reduction for children in Manchester as a result of the SEPP, combining direct and leveraged funds.

6.6 Summary of Other Activities

Through the Health portion of the SEPP, many connections and partnerships were made between the Manchester Health Department and other organizations. A summary of the papers written, presentations given, collaborations created, projects completed, data collected, and grants received is found in the report “Supplemental Environmental Project Program: Reducing Environmental Health Risks Posed to Children Residing in Manchester, NH 2/7/2000 – 2/7/2005.” A portion of that report is included as Appendix A.

These connections and partnerships will continue to benefit the residents of Manchester and New Hampshire, through improved communication and data sharing among health professionals.

⁴ “Attorney General Philip T. McLaughlin and Department of Environmental Services (DES) Acting Commissioner Dana Bisbee announced today that Kalwall Corporation Panels & Accessories and Flat Sheet Divisions (Kalwall) and Structures Unlimited, Inc. (Structures) have agreed to settle the states claim that the companies violated state air pollution control laws at two plants in Bow and one plant in Manchester.” NHDOJ News Release, 1 Oct 2002.
<http://doj.nh.gov/publications/nreleases/100102Kalwall.html>